

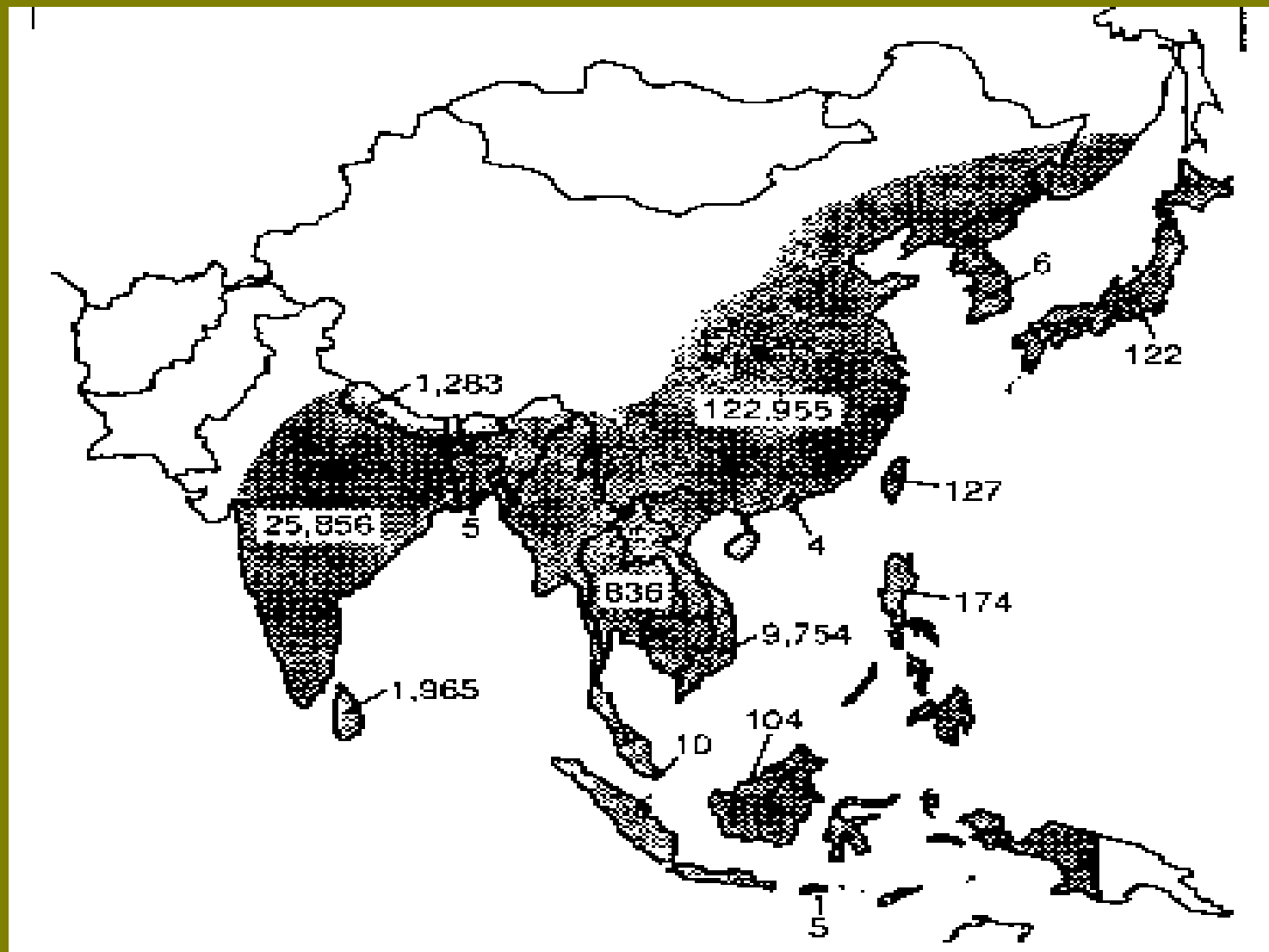
# Japanese Encephalitis

# What is Japanese Encephalitis?

- Viral disease transmitted by mosquitoes
- Only 1/200 to 1/1000 infections are symptomatic
- Symptomatic illness ranges from mild to severe
  - Mild cases resolve within 2 weeks without treatment
  - 50% are severe with progressive neurologic impairment, stupor and coma leading to death or permanent neurologic damage



# Japanese Encephalitis Distribut

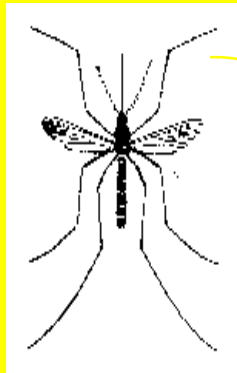


from CDC, MMWR Vol. 42, Jan 8, 1993

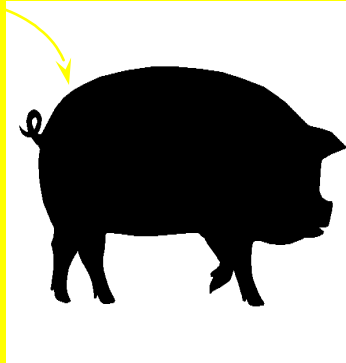
# Transmission Cycles



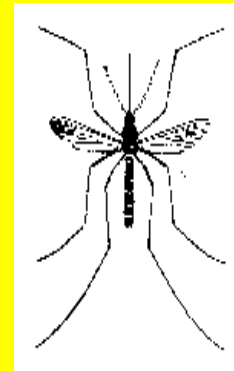
Wading  
Birds



Mosquitoes



Pigs



Mosquitoes



*Amplifying Cycle*

*Maintenance Cycle*



# Vector Information

- Mosquito (*Culex tritaeniorhynchus*)
- Breeds in rice paddies
- Climate conditions (90-100 inches rainfall/year) encourage breeding
- Highest prevalence from March to November
- Highest biting activity from dusk to midnight
- Prefers to feed on pigs
- Virus maintained in overwintering



# Vector Information

- Numerous pig farms on Okinawa. Breeding and slaughter operations create susceptible pig population and are located adjacent to populated areas, including U. S. Bases
- Susceptible pig population, crowded conditions, and proximity to mosquito populations amplify virus

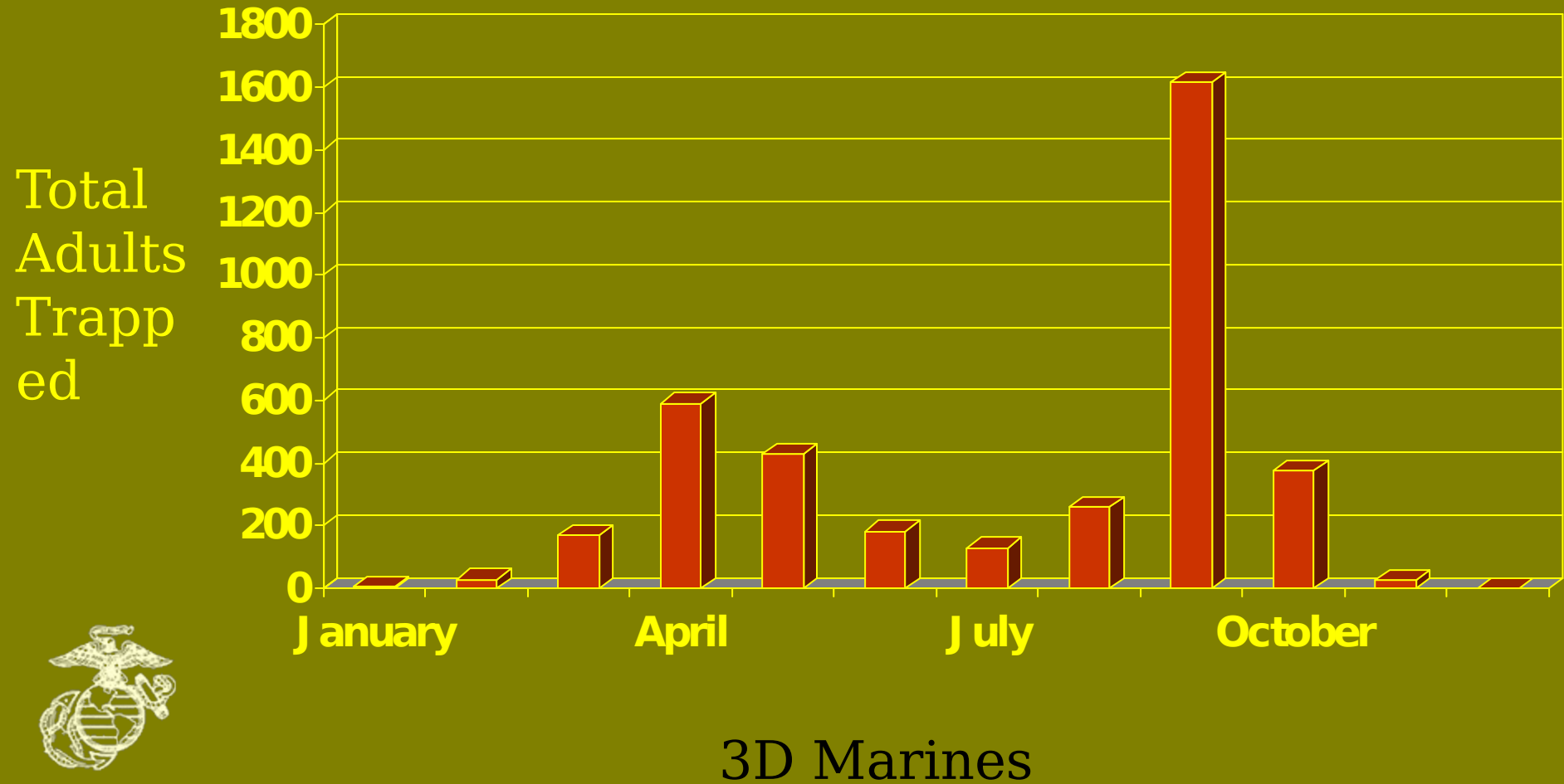


# Vector Surveillance Overview

- Entomology Department, Occupational Health and Preventive Medicine Directorate (OH/PM), conducts vector surveillance on a monthly basis
- Vector surveillance includes - collection, analysis, and pesticide application recommendations.
- Pesticide applications are coordinated between the Entomology Department and MCB Pest Control Office



# 1999 Camp Hansen/Schwab *Culex tritaeniorhynchus* Trap Data



# Background-JE Vaccine

- Vaccine licensed in Japan since 1953
- Okinawan school children (ages 3-15) routinely vaccinated since 1973
- Personnel deploying to Cobra Gold given vaccine under investigational protocol beginning in 1988
- 1991 - 3 Marines at Camp Hansen diagnosed with JE (2 with permanent neurological damage, 1 fully recovered)

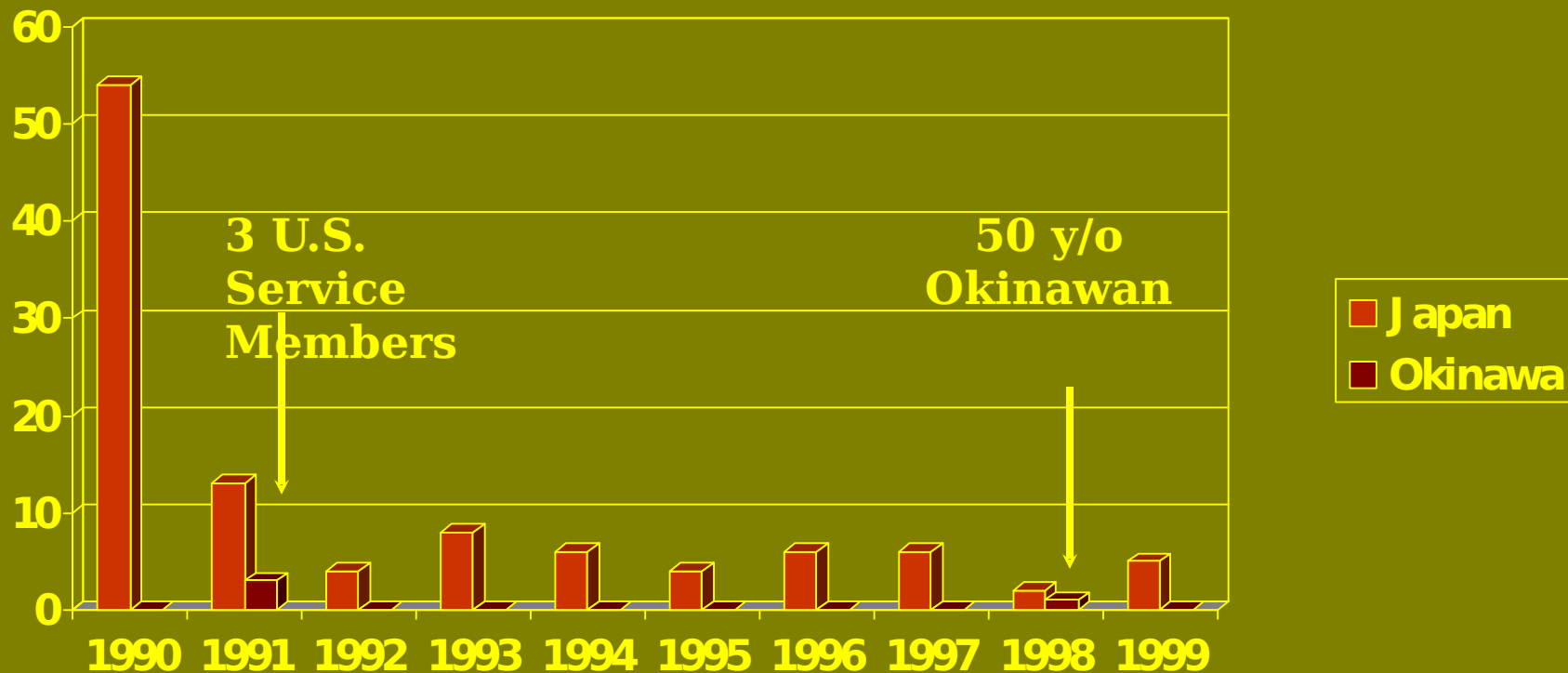


# Background-JE Vaccine

- NOV 91-APR 93 - BUMED vaccine study - 40,000 active duty and dependents immunized against JE
- OCT 91 - FEB 92 - NEPMU6 and DOH/PM conducted JE Risk Assessment by serological study
- DEC 92 - Vaccine received FDA licensure
- DEC 92 - APR 2000
  - No JE Cases in local U. S. Military population since 1991
  - In 1998 one Japanese national was diagnosed with Japanese B Encephalitis, current health status is unknown



# Reported JE Cases 1990 - 1999



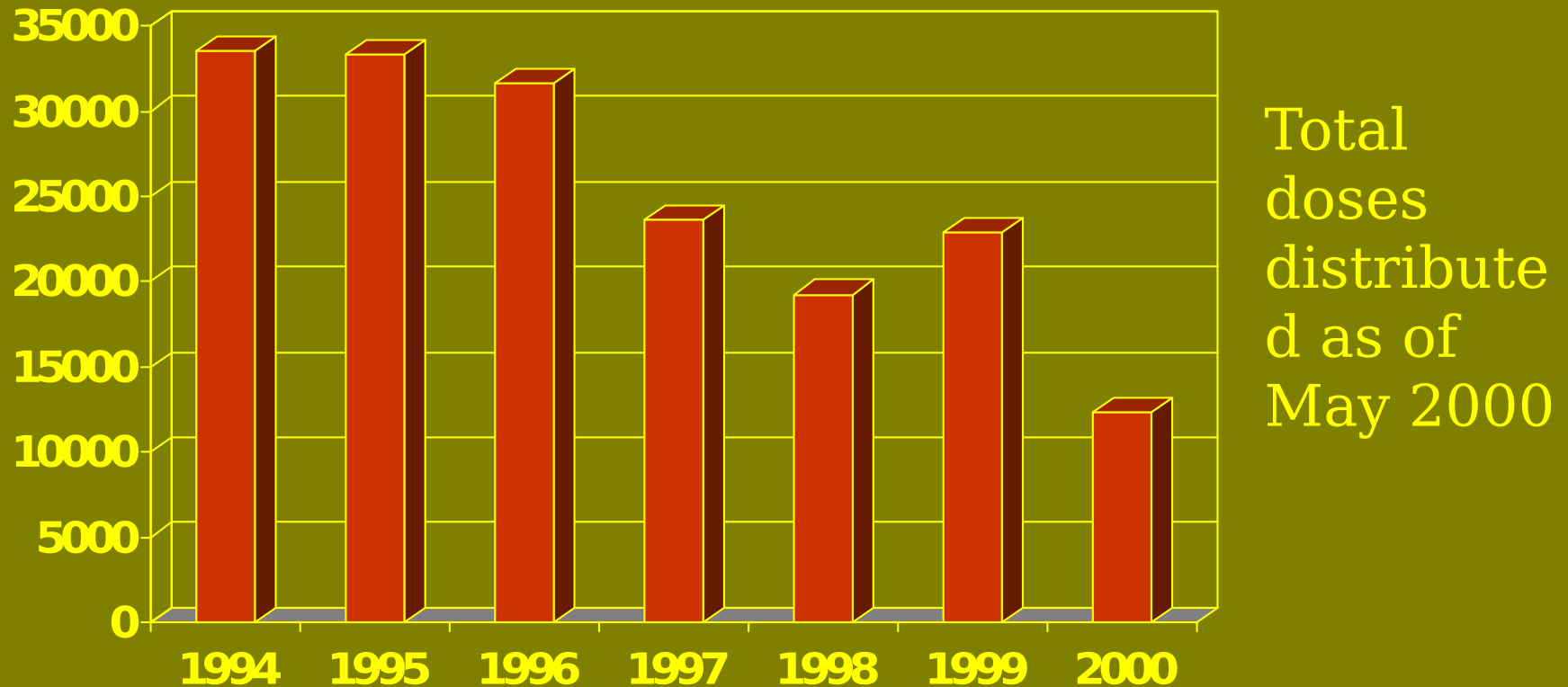
Note: Japan data includes Okinawa

Note: A total of 13 deaths have occurred since



3D Marines

# U. S. Naval Hospital JE Vaccine Distribution



Note: All units are based on number of doses distributed

Note: Vaccine is purchased by box (3 doses/box)

3D Marines

# JE Vaccine Prices

Until Oct 1999 - \$95 to \$110 per 3 dose box

Nov 1999 - \$242 per 3 dose box

April 2000 - \$259 per 3 dose box or \$377 per 10 dose vial

Note: Due to cost constraints, future purchases will be based on 10 dose vials



# Current Recommendations & Policies

- Current Center for Disease Control and Prevention (CDC) JE vaccine recommendations include:
  - Persons who plan to reside in areas where JE is endemic or epidemic
  - Travelers spending a month or longer in endemic areas during transmission season



# Current Recommendations & Policies

- Joint instruction (AFJI 48-110, AR 40-562, BUMEDINST 6230.15 of 1 Nov 95)  
“Immunizations and Chemoprophylaxis”
  - JE vaccine required when deploying or traveling to high risk areas
  - Refers to specific guidance provided by the services



# Current Recommendations & Policies

- USN (BUMED 300105Z Apr 93, BUMED 161500Z Aug 96)
  - Active Duty
    - Required for personnel who are likely to experience field living conditions in JE endemic areas as a result of transfer or deployment
  - Family members
    - Do not need vaccine prior to departure for JE endemic areas
    - Must be briefed at medical check-in on JE threat, risk factors and personal protection
    - Only those at risk should be vaccinated



# Current Recommendations and Policies

CG III MEF Msg 180403Z Nov 99 Guidance

**Avoid exposure** - Avoid mosquito infested areas and use insect repellents. This applies to Active Duty service members and beneficiaries



3D Marines

# Current Recommendations and Policies

CG III MEF Msg 180403Z Nov 99 Guidance

## **Vaccination**

Marine Corps and Navy personnel who are likely to experience field living conditions in JE endemic areas (Okinawa) are required to receive the JE Vaccine.



# Current Recommendations and Policies

CG III MEF Msg 180403Z Nov 99 Guidance  
**Vaccination**

Family members must be educated during medical check-in by MTF staff members. The brief must include information on JE risk factors, personal protective measures and JE Vaccine.

Those at significant risk should be vaccinated. It is strongly recommended that personnel and family members living north of Kadena AB, or within 2-3km of pig farms/rice fields be vaccinated.

3D Marines



# SUMMARY

- Japanese Encephalitis is a serious threat in Okinawa and other endemic areas
- Avoiding exposure and vaccination are the primary means of prevention

